

Colorado Integrated Food Safety Center of Excellence

Training Needs Assessment

**Final Report
October 2013**



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1 INTRODUCTION

The Colorado Integrated Food Safety Center of Excellence (CoE) is a collaboration between the Colorado Department of Public Health and Environment (CDPHE) and the Colorado School of Public Health (CSPH) which aims to provide technical assistance and training on epidemiological, laboratory, and environmental investigations of foodborne illness outbreaks and associated analyses. The Colorado CoE also intends to identify and implement best practices in foodborne diseases surveillance and serve as a resource for public health professionals at state, local, and regional levels. These activities are directed by the Centers for Disease Control and Prevention (CDC) as part of the 2012 Food Safety Modernization Act.

To identify training needed in foodborne illness surveillance and outbreak response, the Colorado CoE undertook a training needs assessment in Colorado 2013. This needs assessment will inform the development of future training.

2 METHODOLOGY

Key informant interviews were used to assess the training needs of public health personnel in Colorado in the area of foodborne illness surveillance and outbreak response.

2.1 Interview guide

Key informant interviews were conducted with the aid of an interview guide (Appendix A). The interview guide included questions about the informant's position and experience, including the number of foodborne and enteric disease outbreaks investigated in the past year by the informant and by their team and the informant's role in outbreak investigations. The guide ascertained what if any training in outbreak investigation is provided at the informant's agency or institution and whether the informant participated in these trainings.

Informants were presented a number of potential training topics and asked to rank these potential trainings on a scale of 1-5 based on how useful the training would be to them or their organization (with 1 being the most useful, 5 being the least useful). Informants were queried about preferred training delivery methods. Informants were asked about the challenges encountered when conducting outbreak investigations and the types of trainings that would help overcome these challenges. Finally, informants were asked about potential challenges and barriers to training. The interview guide was piloted prior to initiating interviews with actual informants.

2.2 Key informant recruitment and interviews

Our goal was to interview 30 key informants—epidemiologists, environmental health specialists, and public health nurses—from local and state public health agencies in Colorado. Key informants with different levels of experience, representing different size health departments from around the state were selected by CoE personnel at CDPHE. An introductory email was sent to informants from CDPHE explaining the purpose of the training needs assessment and informing them that a team member would contact them to schedule an interview. Interviews were conducted in-person or by telephone depending on the informant's location and availability. All interviews were recorded. In addition to these 30 interviews, personnel from the state public health laboratory were interviewed about their training needs.

2.3 Data analysis

Interviews were transcribed by hand and summarized in an Excel spreadsheet. Potential trainings, ranked on a scale of 1-5, were weighted and summed to give an overall score (i.e., 1 being the most useful was given a weight of 5; 5 being the least useful was given a weight of 1). Qualitative data were analyzed using a basic qualitative inductive approach (reading, coding, displaying, reducing, and interpreting). After these steps were taken, common and emergent themes were inferred from the data. For the purpose of this analysis, public health agencies were designated as urban or rural, where rural included rural and frontier counties (Appendix B).

3 RESULTS

3.1 Key informant characteristics

Thirty key informant interviews were completed from March to May 2013. Most (n=21) were conducted by telephone; 9 were conducted in-person.

Key informants held various positions within their institution, ranging from entry level to senior managerial, and included 14 epidemiologists, 9 environmental health specialists, and 7 public health nurses (Table 1).

Eighteen informants were based in urban counties, 15 were based in rural counties, while 3 regional epidemiologists covered both urban and rural counties. Together the 30 key informants represented 50 of the 64 counties in the state of Colorado (including Adams, Alamosa, Arapahoe, Archuleta, Baca, Bent, Boulder, Chaffee, Conejos, Costilla, Crowley, Delta, Denver, Dolores, Douglas, Eagle El Paso, Garfield, Grand, Gunnison, Hinsdale, Huerfano, Jackson, Kiowa, La Plata, Larimer, Las Animas, Logan, Mesa, Mineral, Moffat, Montezuma, Montrose, Morgan, Otero, Ouray, Phillips, Pitkin, Prowers, Pueblo, Rio Blanco, Rio Grande, Routt, Saguache, San Juan, San Miguel, Sedgwick, Summit, Washington, and Yuma).

Table 1: Key informant characteristics

Characteristic	N=30
Occupation	
Epidemiologist	14
<i>Regional epidemiologist</i>	7
<i>State/local epidemiologist</i>	7
Environmental health specialist	9
Public health nurse	7
Location/counties covered*†	
Urban	18
Rural	15
Type/size of health department*	
State health department	3
Multiple county health departments	7
Single county health department	20
<i>Small</i>	9
<i>Medium</i>	3
<i>Large</i>	8

*Regional epidemiologists cover multiple health departments; 3 cover health departments located in both urban and rural counties.

All key informants investigated at least one foodborne or enteric disease outbreak in 2012; 43% reported investigating 5 or more, while 33% investigated 10 or more. In general, informants in urban areas and those in larger health departments reported investigating more outbreaks compared to rural and smaller health departments. The majority (80%) of informants had worked 5 years or more in a position where they were tasked with responding to outbreaks; 43% had worked 10 years or more in such a position.

All informants reported receiving some form of training in foodborne disease surveillance and outbreak response. Informal trainings within their organization and at state-wide meeting (e.g., the quarterly foodborne illness “FITS” meeting) were frequently mentioned. The most frequently mentioned formal training was CDPHE’s basic communicable disease course. Some informants reported attending training delivered by the CDC and the Food and Drug Administration’s Office of Regulatory Affairs’ Online University (ORAU).

Quotes from informants about existing training opportunities

“There are [many] good trainings, but [they are] not always available or [easy to find when needed]. To have something you can [quickly] pull up to get information or a training would be great.”- Environmental Health Specialist

“[I have done the] basic communicable disease training at CDPHE for 7 years. That’s the only one offered every year. Other [trainings are held] on [an as] needed [and] request basis.”- Epidemiologist

“[I wish] CDPHE's training were more in-depth, [they are] too basic for us.”- Environmental Health Specialist

“[We send] out staff here at CDPHE really on case by case basis, [we don’t have] much funding to send staff out to external trainings.”- Epidemiologist

“[A] new area of interest is [the] electronic system (Epi Info.) and using those templates. Also [we would like] to learn how to transfer to a Google template.”- Public Health Nurse

3.2 Ranking of training needs

Training on ‘Environmental assessments’ received the highest overall score followed by training in ‘Legal issues in surveillance and outbreak investigations’; both of these trainings were ranked as 1 or 2 (where 1 was the most useful) by 22 of 30 informants when asked how useful the trainings would be to them or their organization (Table 2).

Table 2. Importance of training needs as ranked by informants

Training	Overall score	Number of informants ranking training as 1 or 2*
Environmental assessments	123	22
Legal issues in surveillance and outbreak investigations	120	22
Interviewing skills	113	19
Overview of outbreak investigation	112	18
Control of secondary spread	111	18
Writing after action reports	110	18
Questionnaire design	107	18
Analytical epidemiological methods	99	16
Foodborne disease surveillance	97	12
Descriptive epidemiological methods	95	11
Communicating with the media and the public	92	13

**How useful do you think these trainings would be to you and your organization (where 1 is the most useful)?*

Informants in urban counties gave their highest rankings to trainings on ‘Environmental assessments’, ‘Legal issues in surveillance and outbreak investigations’, and ‘Questionnaire design’, while rural informants gave training in ‘Control of secondary spread’ and ‘Interviewing skills’ a higher ranking (Table 3). Informants located in rural counties ranked basic courses such as ‘Interviewing skills’, ‘Overview of outbreak investigations’, and ‘Foodborne disease surveillance’ higher than those in urban counties.

Table 3. Importance of training needs as ranked by informant location (urban versus rural)*

Training (overall score; number of informants ranking training as 1 [most useful] or 2)	
Urban (n=17)	Rural (n=13)
Environmental assessments (score=69; n=12)	Control of secondary spread (score=57; n=11)
Legal issues in surveillance/outbreaks (score=65; n=12)	Interviewing skills (score=56; n=12)
Questionnaire design (score=62; n=12)	Overview of outbreak investigations (score=55; n=10)
Writing after action reports (score=61; n=9)	Legal issues in surveillance/outbreaks (score=55; n=10)
Analytical epidemiological methods (score=58; n=11)	Foodborne disease surveillance (score=54; n=10)
Overview of outbreak investigations (score=57; n=8)	Environmental Assessment (score=54; n=10)
Interviewing skills (score=57; n=7)	Writing after action reports (score=49; n=9)
Control of secondary spread (score=54; n=7)	Descriptive epidemiological methods (score=45; n=7)
Descriptive epidemiological method (score=50; n=4)	Questionnaire design (score=45; n=6)
Communicating with media/the public (score=48; n=6)	Communicating with media/ the public (score=44; n=7)
Foodborne disease surveillance (score=43; n=2)	Analytical epidemiological methods (score=41; n=5)

*For the purpose of this analysis regional epidemiologists were classified as urban or rural based on the county where they were located, not the territory covered.

Rankings differed by occupation (Table 4). Environmental health specialists gave their highest rankings to training on ‘Environmental assessments’ and ‘Control of secondary spread’. Training on ‘Environmental assessments’ was also ranked highly by epidemiologists (both regional and local/state epidemiologists). Epidemiologists at the state and local level gave their highest ranking to training on ‘Analytical epidemiological methods’, while regional epidemiologists gave highest ranking to ‘Legal issues in surveillance and outbreak investigations’. The highest ranked training among public health nurses were ‘Overview of outbreak investigations’ and ‘Legal issues in surveillance and outbreak investigations’.

Table 4. Importance of training needs as ranked by informants, by occupation

Training (overall score; number of informants ranking training as 1 [most useful] or 2)			
Environmental health specialist (n=9)	Epidemiologist (n=7)	Regional epidemiologist (n=7)	Public health nurse (n=7)
Environmental assessments (score=43; n=9)	Analytical Epidemiological Methods (score=32; n=7)	Legal issues in surveillance/ outbreak (score=34; n=7)	Overview of outbreak investigations (score=30; n=5)
Control of secondary spread (score=41; n=8)	Environmental assessments (score=32; n=6)	Environmental assessments (score=29; n=5)	Legal issues in surveillance/ outbreaks (score=29; n=5)
Interviewing skills (score=38; n=8)	Writing after action reports (score=28; n=5)	Interviewing skills (score=29, n=5)	Descriptive epidemiological methods (score=28; n=5)
Legal issues in surveillance/ outbreaks (score=35; n=7)	Questionnaire design (score=27; n=6)	Overview of outbreak investigations (score=27; n=5)	Control of secondary spread (score=27; n=5)
Overview of outbreak investigations (score=35; n=6)	Legal issues in surveillance/ outbreaks (score=25; n=4)	Writing after action report (score=26, n=4)	Interviewing skills (score=26; n=4)
Writing after action report (score=33; n=5)	Communicating with the media/public (score= 23; n=4)	Questionnaire design (score=25; n=5)	Questionnaire design (score=26; n=3)
Communicating with the media/public (score=32; n=5)	Interviewing skills (score=22; n=2)	Foodborne disease surveillance (score=24; n=3)	Foodborne disease surveillance (score=25; n=4)
Questionnaire design (score=29, n=4)	Control of secondary spread (score=21; n=2)	Descriptive epidemiological methods (score=24; n=3)	Analytical Epidemiological Methods (score=25; n=4)
Foodborne disease surveillance (score=27; n=4)	Foodborne disease surveillance (score=21; n=1)	Analytical Epidemiological Methods (score=23; n=4)	Writing after action report (score=23; n=4)
Descriptive epidemiological methods (score=25; n=2)	Overview of outbreak investigations (score=20; n=2)	Communicating with the media/public (score=22; n=3)	Environmental assessments (score=19; n=2)
Analytical Epidemiological Methods (score=19; n=1)	Descriptive epidemiological methods (score=18; n=1)	Control of secondary spread (score=22; n=3)	Communicating with the media/public (score=15; n=1)

3.3 Training delivery methods

The majority of informants said they would prefer in-person trainings for trainings on 'Interviewing skills', 'Environmental assessments', and 'Communicating with the media and the public' (Table 5). The reason given was the "hands-on" nature of the content and training materials. Both online and in-person were considered options for trainings on 'Questionnaire design', 'Legal issues in surveillance in outbreak investigation', 'Overview of outbreak investigation', and 'Control of secondary spread'. While many informants said they preferred in-person trainings, factors such as time and money made online trainings appealing.

Table 5: Preference for in-person versus online training for ranked trainings (among informants ranking training as 1 [most useful] or 2)

Training (number of informants ranking training as 1 [most useful] or 2)	In-person N (%)	Online N (%)
Interviewing skills (n=19)	18 (95)	1 (5)
Environmental assessments (n=22)	18 (82)	4 (18)
Communicating with the media and the public (n=13)	11 (85)	2 (15)
Analytical epidemiological methods (n=16)	10 (63)	6 (38)
Questionnaire design (n=18)	10 (56)	8 (44)
Legal issues in surveillance/outbreaks (n=22)	9 (41)	13 (59)
Overview of outbreak investigations (n=18)	8 (44)	10 (54)
Control of secondary spread (n=18)	7 (41)	10 (59)
Descriptive epidemiological methods (n=11)	7 (64)	4 (36)
Foodborne disease surveillance (n=12)	6 (50)	6 (50)
Writing after action reports (n=18)	5 (28)	13 (72)

Most informants also had a preference for team training (as opposed individual learning). A couple of informants stated that it was important to learn the material together and train together as outbreak investigations rely on group work. Although most expressed a preference for team training, individual trainings were seen as filling an important need for the following reasons: all staff members may not be able to leave the office at the same time due to small staff and the need for coverage in the office, individuals might feel uncomfortable asking questions in a group setting, and it might be easier to find a time to do training for one person than a whole group.

3.4 Training to address challenges during outbreak investigations

Challenges faced during outbreak investigations included a lack of knowledge about roles and responsibilities, a lack of compliance with specimen collection, problems in dealing with difficult people, and a lack of resources.

Table 6. Challenges experienced during outbreak investigations, by occupation*

Environmental health specialists	Epidemiologists	Regional epidemiologists	Public health nurses
Lack of resources	Lack of training	Lack of compliance with specimen collection	Lack of understanding of roles and responsibilities
Lack of understanding of roles and responsibilities	Completing after action reports	Dealing with difficult people	Lack of experience
Lack of interviewing skills	Data collection	Lack of time/timeliness	Communication
Being able to meet face-to-face with the public given work schedule/hours	Lack of resources	Frequent turnover in public health field and with long term care facilities	Dealing with difficult people
Communication	Lack of compliance for specimen testing	Lack of well-trained staff	Lack of skills for designing questionnaires
Language barriers	Communication	Lack of resources	Lack of staff
Dealing with difficult people	Dealing with difficult people	Access to questionnaires	Lack of compliance with specimen collection
Isolation of health department	Lack of interviewing skills	Communication	

*Ranked in order of most frequently mentioned

All informants emphasized the importance of good communication during outbreak investigations and the need for clearly defined roles and responsibilities. Some informants cited the success of implementing an incident command structure during outbreak investigations.

Good communication with external partners was also mentioned. This was seen as especially important during multi-jurisdictional outbreaks or when additional resources or assistance was required. Partners in other health departments can often be of assistance by sharing existing questionnaires or other resources, which save time and can often expedite the outbreak investigation. In order to build stronger relationships between personnel in different organizations, informants suggested the need for more multi-agency meeting (e.g., the quarterly foodborne illness “FITS” meeting) and table-top exercises (Table 7).

Table 7. Trainings key informant said would help address challenges experienced during outbreak investigations, by occupation*

Environmental health specialists	Epidemiologists	Regional Epidemiologists	Public Health Nurses
Two-day long quarterly foodborne illness “FITS” meeting	Incident command structure	Interview techniques	Refresher course on epidemiology and questionnaire design
Foodborne and enteric pathogens	Table-top exercises	Dealing with difficult people	Yearly refresher course on outbreak investigations
Refresher courses	Leadership skills	How to explain the value of specimen testing	
Tabletop exercises		Tabletop exercises	
Communicating with owners/operators		Just-in-time trainings	
Dealing with difficult people			
Legal issues			
Team building			

*Ranked in order of most frequently mentioned

Quotes from informants about specific challenges when doing outbreak investigation work

“Communication is always a big deal, particularly if it’s multijurisdictional [outbreak]. Knowing who the players are and finding out who you need to talk to about product, distribution, and industry.”- Environmental Health Specialist

“[Having a] good relationship with all facilities lends itself to early detection and reporting, and helps reduce secondary exposures.”
- Public Health Nurse

“Need an infrastructure set up, no real system in place.”
- Environmental Health

“How to deal with those difficult people, upset people, managers at facilities, so maybe some conflict resolution training.”
-Epidemiologist

“A lot of the challenge is making ourselves understood by the people who are affected in outbreak investigations and the reason behind the guidance that we give. People sometimes think we are giving them unnecessary grief.”- Regional Epidemiologist

“Obtaining the samples to validate the outbreak, it's hard to obtain from facilities.”- Public Health Nurse

“Getting testing (doctor, person, somebody) to provide a stool sample. Main reason people don't do it is because of cost, state will only pay for it at certain times.” – Regional Epidemiologist

3.5 Barriers to participating in trainings

Funding was cited as the main barrier to participating in trainings. Only two of the 30 key informants interviewed said that funding for training was not an issue at their health department. As a solution, many health departments had adopted a “train-the-trainer” approach to training, sending one staff member to a training with the expectation that they would train other staff on their return.

The second most important barrier was time. Several informants, particularly those in smaller health departments, mentioned having a limited number of staff and the fact that people often need to wear multiple ‘hats’, make trainings burdensome to attend in-person.

Travel was also mentioned as a barrier, particularly by informants located in rural counties. Most trainings are offered in Denver which can mean 2-5 hours of driving each way for some public health personnel. Other barriers included: availability of trainings, awareness of trainings, caps on number of participants allowed to attend a given training, travelling during inclement weather, and fulfilling different training needs among staff.

3.6 Useful resources

Resources mentioned by informants that would be helpful during outbreak investigations included questionnaires (for specific pathogens or difference outbreak settings), checklists or step by step guides for handling outbreak investigations, contact information sheets for key personnel, fact sheets, assistance using Epi Info, and bilingual services.

3.7 Public health laboratory perspective

Staff at the State Public Health Laboratory cited the need for training on the latest laboratory techniques and training on Council to Improve Foodborne Outbreak Response (CIFOR) guidelines. The main challenges faced by the laboratory included the implementation of new technologies; maintenance of existing capabilities; expediting the investigation process to identify the source more rapidly; improving the speed of the courier service during outbreak investigations; and educating epidemiologists on the scope and utility of locally available laboratory tests.

The main barrier to participating in trainings was limited funding. Restricted funding levels for training were seen as not only impacting affecting local efforts to develop new and innovative approaches to laboratory testing, but also the ability of the laboratory to participate in national initiatives (e.g., whole genome sequencing). The opportunity to participate in trainings and meetings at both the local and national level was seen as crucial to a broad-based sharing of challenges, barriers, and solutions that could lead to a unified improvement of laboratory response. Frequent meetings that include epidemiology and laboratory staff, while sometimes time-consuming, were seen as imperative for advance planning and good communication which resulted in more successful outbreak investigations and response.

4 CONCLUSIONS

This assessment highlighted the need for more training opportunities for public health personnel in Colorado in foodborne illness surveillance and outbreak response. A number of trainings were ranked highly including training on 'Environmental assessments', 'Legal issues in surveillance and outbreak investigations', 'Interviewing skills', 'Overview of outbreak investigations', 'Control of secondary spread', 'Writing after action reports', and 'Questionnaire design'.

Training needs differed between rural and urban health departments and by occupation. Generally, informants in smaller rural health departments who often had less experience investigating outbreaks, emphasized the need for more basic trainings on "Overview of outbreak investigations", 'Interviewing skills', and 'Foodborne Disease Surveillance'. While there were some differences in trainings needs by occupation, 'Environmental assessments' and 'Legal issues in surveillance in outbreak investigations' were ranked highly by multiple groups.

Barriers to training included resources and time. Therefore, while many informants said they preferred in-person trainings, limited time and resources often made online trainings more feasible option.

This information will be used by the Colorado CoE to guide future planning and training development.

APPENDIX A

Interview Guide: Integrated Food Safety Center of Excellence

Needs Assessment

Introduction:

Thank you for being willing to talk with me. I am interested in learning about your training needs in the area of foodborne illness surveillance and outbreak response. This information will be used for future planning and training development as part of the new Colorado Integrated Food Safety Center of Excellence.

As we talk, please keep in mind that there are no “right” or “wrong” answers to any of the questions I ask you — The information you provide is a valuable part of this training needs assessment, I am simply interested in learning about your current training needs so that you and your team are better equipped when responding to foodborne illness outbreaks. Just to clarify when I say foodborne outbreak investigations, I am speaking broadly about foodborne and enteric infections transmitted by food and other routes (so I am interested in a variety of things ranging from person-to-person norovirus outbreaks to E. coli O157 outbreaks due to contact with animals at a petting zoo).

This interview will take about 30-45 minutes. All the things you share with me today will be kept confidential, but I will be recording this interview, so that I won't miss anything you say. After our interview, the recording of our conversation will be summarized. However, no names or identifying information will be included in the summary. Can I confirm that you are okay talking with me today? (Wait for verbal consent.)

*Interviewer: By checking this box the person consents to this interview.
[turn on digital recorder]*

I'd like to start by asking you some basic questions about your position and experience.

Section 1 Questions: Position and Experience

1. What is your current position?

Probe- Name of position?

Probe- What is your role in an outbreak investigation? (Overall coordination, interviewing, environmental assessments, analysis of data?)

2. How long have you been in this position?

Probe- Years? Months?

3. How long have you worked in a position where you respond to outbreaks?

Probe for clarity- only enteric/foodborne illnesses

4. Over the past year, how many outbreaks have you investigated? How many outbreaks did your team investigate?

Probe- If no outbreaks in the past year, the most recent?

5. Where any of these outbreak's multijurisdictional?

5A. *(For epidemiologists only:)*

Did you conduct a case-control or cohort study during any of your investigations?

Were these outbreak mostly detected from complaints to the health department or through disease surveillance?

6. Does your organization offer any training in foodborne disease surveillance or outbreak response?

Probe- In house? External? What types of trainings are offered? Please list.

7. Have you taken any trainings or courses on foodborne disease surveillance or outbreak response?

Probe- Name of training? Who gave it? Where? When? Helpful?

Section 2 Questions: Training needs

Please consider some of the outbreaks that your team investigated in 2012, if not, prior years:

8. What types of challenges did you or your team encounter when investigating these outbreaks?

Probe- Specific example? Why a challenge?

9. Can you think of trainings that would have better prepared you or your team to deal with these challenges?

Probe- Specific training? Specific skills? What would be the best format for this training (in-person or online)?

10. Can you think of things that went well when responding to these outbreaks?

Probe- Specific example?

Probe- Why did it go well? Training/preparation?

11. I am going to go through particular trainings in the area of foodborne illness surveillance and outbreak response?

Probe- On a scale of 1-5 (1 being the most useful, 5 being the least useful) how useful do you think these trainings would be to you and your organization?

A. Foodborne disease surveillance

(Probe for clarity- using CEDRS surveillance system, or surveillance and how it works nationally)

B. Overview of an outbreak investigation

(Probe for clarity- steps in an outbreak investigation, the relationships, roles and responsibilities of local, state, and federal agencies)

C. Descriptive epidemiological methods

(Probe for clarity- making line lists and epi curves)

D. Analytic epidemiological methods

(Probe for clarity- designing case-control, cohort studies, analyzing data)

E. Questionnaire design

(Probe for clarity- designing questionnaires for use in case-control and cohort studies)

F. Interviewing skills

(Probe for clarity- hypothesis generation interviews or routine case interviews)

G. Environmental assessments/investigations

(Probe for clarity- retail food establishments, recreational water settings, and child care settings)

H. Control of secondary spread

(Probe for clarity- infection control measures, e.g., during a norovirus outbreak)

I. Communicating with the media/public

(Probe for clarity- writing press releases, doing interviews with the media)

J. Legal issues in surveillance and outbreak investigations

(Probe for clarity- what public health personnel are legally able to do/what information can be collected and shared)

G. Writing after action reports

(Probe for clarity- how to assess what went well and what did not go well after an outbreak investigations)

12. Interviewer- for all trainings listed above that were ranked a 1 or 2, ask about the best format? In-person or on-line?

13. Are there any trainings or courses related to foodborne disease surveillance or outbreak response that you are aware of that you or your team would benefit from?

Probe-Local, regional, national

Probe- Best format? (in-person or online)

14. For the trainings that you mentioned above, are there any that you would prefer your group to do as a team?

Probe- Which one/s?

15. Are there other resources that could help you investigate an outbreak?

Probe for clarity- such as, but not limited to: questionnaires, check lists, etc?

16. What are three ways in which you would like to improve your organizations food outbreak investigation and response work?

Ok, in this last section I want to ask you about potential challenges to and preference for training.

Section 3 Questions: Challenges and preferences

17. What challenges do you or your team face in taking advantage of or participating in trainings?

Probe- Funding, lack of staff, lack of knowledge, lack of communication with other health departments/outside resources, etc.?

18. Would you or others from your organization be able to travel for in-person trainings or workshops?

Probe- Yes/No? How far? How many from your organization?

19. Does your organization have the funding available to pay for trainings or for travel to in-person training?

Probe- Yes/No?Partial?

20. Before we end is there anything that I have not touched on that you think is important for me to know as far as improving your organizations response to outbreak investigations?

21. Is there anybody else that you can think of that would be good for me to speak to about training related to foodborne disease surveillance and outbreak response?

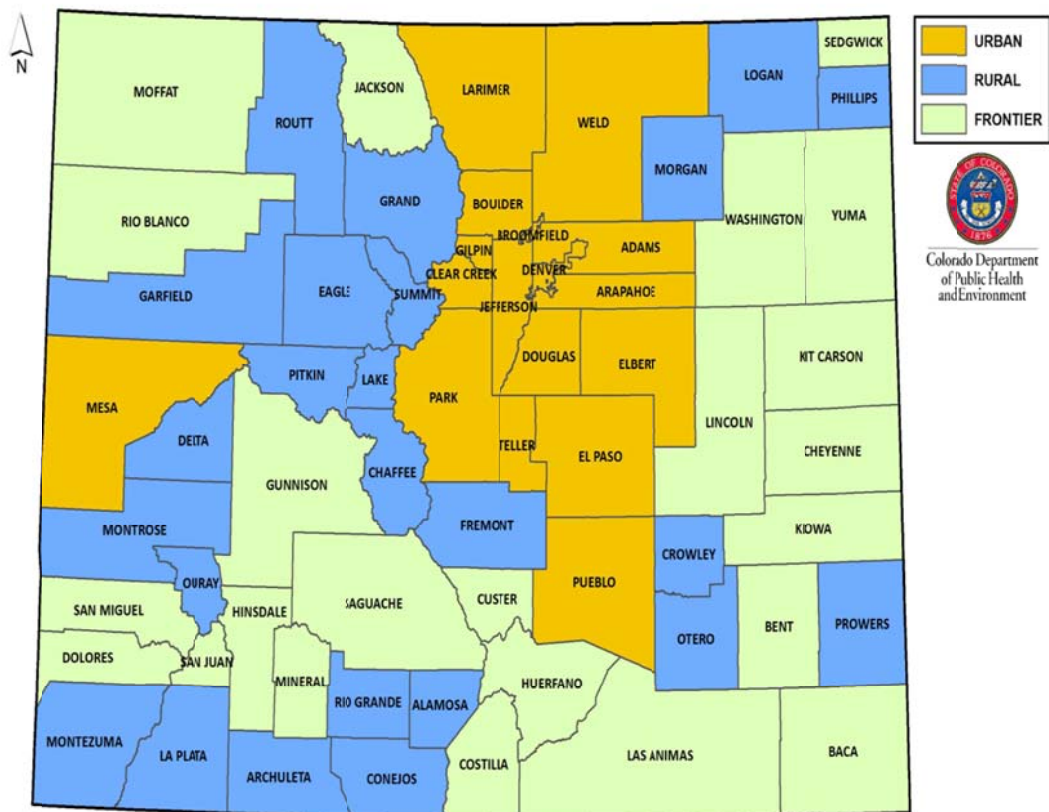
Probe- Another person in your role at your agency? Or someone from another agency?

Well, that concludes our interview. If you think of anything else that you would like to share with me please don't hesitate to contact me. Thank you so much for sharing all that information with me.

TURN OFF RECORDER.

APPENDIX B

Colorado's Urban/Rural/Frontier County Designation



Urbanized area definitions from the Office of Management and Budget (OMB):

Urban counties contain an urban nucleus of 50,000 people or more, and include outlying counties with 25% or more workers commuting to an urbanized area.

Nonmetro counties are outside the boundaries of metro areas and are further subdivided into two types, Rural and Frontier.

Frontier counties is a subset of Rural, with a population density of 6 or fewer people per square mile.

Map Created February 5, 2013 Data Source: Office of Management and Budget - <http://www.whitehouse.gov/omb/>